

IN THE CLAIMS:

Please amend the noted claims as follows:

1. (Currently Amended) A method for displaying ~~substantially noise-free~~ waveforms, comprising the steps of:
  - dividing an acquired waveform into a plurality of waveform slices;
  - categorizing each of said plurality of waveform slices according to at least a sequence of N bit values prior to a bit value being observed;
  - averaging said waveform slices in each category resulting in an average pattern for each category;
  - storing the average pattern for each category to a computer readable medium; and
  - displaying each of said averaged patterns in an overlaid manner.
2. (Original) The method of claim 1, wherein N is in the range of 3-10.
3. (Original) The method of claim 2, wherein N=6.
4. (Original) The method of claim 1, wherein each of said waveforms is categorized further according to at least a sequence of P bit values following said bit value being observed.
5. (Currently Amended) The method of claim ~~34~~, wherein P=1.
6. (Currently Amended) The method of claim 1, wherein said acquired waveform is stored in a memory upon acquisition.

7. (Original) The method of claim 1, further comprising the step of obtaining data dependent jitter based upon a peak-to-peak variation of threshold crossing time for a specified vertical threshold.

8. (Currently Amended) The method of claim 1, further comprising the step of characterizing ~~the~~ an eye crossing level by observing a level at which ~~the~~ a crossing distribution's peak-to-peak variation is narrowest ~~in said display~~.

9. (Currently Amended) The method of claim ~~8~~7, further comprising the step of re-dividing said acquired waveform into a second plurality of waveform slices in accordance with said obtained data dependent jitter, and substantially corrected for systematic ~~ISI~~ intersymbol interference (ISI) induced jitter and/or noise.

10. (Original) The method of claim 9, wherein said second plurality of waveform slices depict a substantially ISI-free jitter component associated with said acquired waveform.

11. (Currently Amended) An apparatus for displaying ~~substantially noise-free~~ waveforms, comprising ~~the steps of~~:

means for dividing an acquired waveform into a plurality of waveform slices;

means for categorizing each of said plurality of waveform slices according to at least a sequence of N bit values prior to a bit value being observed;

means for averaging said waveform slices in each category resulting in an average pattern for each category; and

a display for displaying each of said averaged patterns in an overlaid manner.

12. (Original) The apparatus of claim 11, wherein N is in the range of 3-10.

13. (Original) The apparatus of claim 12, wherein N=6.

14. (Original) The apparatus of claim 11, wherein each of said waveforms is categorized further according to at least a sequence of P bit values following said bit value being observed.

15. (Original) The apparatus of claim 14, wherein P=1.

16. (Original) The apparatus of claim 11, wherein said acquired waveform is stored in memory upon acquisition.

17. (Original) The apparatus of claim 11, further comprising means for obtaining a data dependent jitter based upon a peak-to-peak variation of threshold crossing time for a specified vertical threshold.

18. (Currently Amended) The apparatus of claim 11, further comprising means for characterizing ~~the~~ an eye crossing level by observing a level at which ~~the~~ a crossing distribution's peak-to-peak variation is narrowest ~~in said display~~.

19. (Currently Amended) The apparatus of claim ~~18~~17, further comprising means for re-dividing said acquired waveform into a second plurality of waveform slices at least additionally in accordance with said obtained data dependent jitter, and substantially corrected for systematic ~~ISI~~ intersymbol interference (ISI) induced jitter and/or noise.

20. (Currently Amended) The apparatus of claim ~~18~~ 19, wherein said second plurality of waveform slices depict a substantially ISI-free jitter component associated with said acquired waveform.